

Name: _____

at1119paper: Complete the Square, $b = \text{odd}$ (v501)

Example

By completing the square, find both solutions to the given equation:

$$x^2 - 59x = -598$$

Add $\left(\frac{-59}{2}\right)^2$, which equals $\frac{3481}{4}$, to both sides of the equation.

$$x^2 - 59x + \frac{3481}{4} = \frac{1089}{4}$$

Factor the left side.

$$\left(x + \frac{-59}{2}\right)^2 = \frac{1089}{4}$$

Undo the squaring.

$$\begin{aligned} x + \frac{-59}{2} &= \frac{-33}{2} \\ x &= \frac{59 - 33}{2} \\ x &= 13 \end{aligned}$$

$$\begin{aligned} \text{or} \\ x &+ \frac{-59}{2} = \frac{33}{2} \\ x &= \frac{59 + 33}{2} \\ x &= 46 \end{aligned}$$

Question 1

By completing the square, find both solutions to the given equation:

$$x^2 + 55x = -294$$

Question 2

By completing the square, find both solutions to the given equation:

$$x^2 + 51x = 1800$$

Question 3

By completing the square, find both solutions to the given equation:

$$x^2 + 17x = 38$$